

LIFE HISTORIES OF NORTH AMERICAN GEOMETRIDAE.—LVII.

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Aplodes darwinata Dyar. A discussion of this form will be found in my paper on the fauna of the Kootenay District of British Columbia (Proc. U. S. Nat. Mus. xxvii, 903, 1904).

Egg. Elliptical, perfectly flat above and below, one end a little depressed, no truncation, its area represented by a slight oblique irregularity. Reticulations indicated only by the slight pores at the angles in a neatly hexagonal pattern. Orange ochraceous, shining, later dull reddish. Size $1.1 \times .7 \times .5$ mm. Hatched in 9 days. The larvae ate willow.

Stage I. Head rounded, erect, not shining, orange ochraceous, with short, stout, slightly swollen setae. Body very short and robust, flattened, winged by lateral projections. Yellow brown, a narrow dorsal line and band above the lateral wings dark brown; no shields. On joint 2 dorsally three of the setae are raised on irregular club-shaped papillae; on joints 5 to 9 seta i is similarly elevated, a truncate papilla, bearing the seta on the anterior aspect. On joints 5 to 8 seta v is pushed dorsad in line with iv and the two raised on an angular prominence. Tubercles small blackish, setae short, swollen tipped, ii especially flattened fan-shaped and cleft at tip. Broad, illy defined subventral and ventral bands. Tubercle i of joint 12 is elevated on a papilla.

Stage II. Head rounded bilobed, brown, densely granular in paler; width .5 mm. Body flattened with wing-shaped, double pointed projections on the sides of joints 5 to 9. Tubercles on joints 2, 3 and 12 conically produced. Light brown dorsally with many pale granules, tubercles papillose, setae minute. A broad dark brown area subventrally below the projections with light granules. Venter contrasting light brown; feet all pale. The larva does not bear any attached objects on the projections.

Stage III. Head rounded bilobed, dark brown, pale granular, face washed with whitish except the sutures; width .8 mm. Body as before, the projections of joints 6 to 8 pronounced, bent upward. Dorsal tubercles of thorax and joint 12 highly papillose; anal feet triangular. Light brown, densely pale granular, sides below the projections dark brown; dorsal line dark.

Stage IV. Head higher than wide, flat before, bilobed, rounded, sutures deep, finely papillose roughened; width 1.1 mm. All pale whitish brown, finely papillose granular, the spicular granules pale. Nearly unmarked; a series of triangular brown dorsal spots on the anterior edges of the segments of joints 6 to 8, the under sides of the projections of joints 5 to 9 and a subdorsal dash on joint 12 dark brown. The prominences consist of the four corners of the collar, two on the posterior edge of joint 2, side angles on joints 3 and 4, slight projections on the sides of joints 5 and 9, distinct double tipped ones on joints 6 to 8; tubercle ii on joint 12 a high cone. Tubercles and setae obsolete, the fine granules almost furry.

Stage V. Head rounded bilobed, clypeus depressed at apex, granular; all pale creamy brown, black shaded in sutures and on sides; width 1.6 mm. Body exactly as before, creamy brown, soft velvety, spicular granular, scarcely marked except darker shades on the under sides of the projections and a brown subdorsal bar on joints 11-12.